REMARKS/ARGUMENTS

The Applicant thanks the Examiner for the Office Action dated June 18, 2008.

Claim Rejections – 35 USC 103(a)

The Applicant has considered in detail the relevance of the new citation. In response, claims 1, 19 and 38 have been amended to specify that the heater element includes solid material having a thickness of at least 0.25 microns. Basis for this amendment can be found at page 36, line 31 of the specification.

The Examiner's mass calculations based on the disclosure of the newly cited De Moor appear to be accurate. However, the Applicant contests the relevance of the De Moor citation in connection with *suspended* heater elements, which are clearly the subject-matter of the present invention.

Suspended heater elements are subjected to considerable mechanical stresses (e.g. torsional stresses) in addition to the usual thermal stresses during operation. On the other hand, De Moor is a document concerned with the more usual embedded heater elements. That is to say, De Moor teaches heater elements, which are physically fused to a passivated silicon wafer. This is clear from the passage at page 285 of De Moor, where it is stated:

> As starting material 6" p-type Si wafers with <100> orientation were used. To provide a complete electrical insulation between the Si wafer and the hereafter processed heater structures, a 1000 nm thick PECVD oxide was deposited on all the wafers. In the next step the Ti/TiN is sputter deposited.

Moreover, De Moor's embedded (or fused) heater elements have a maximum thickness of only 65 nm, as admitted by the Examiner.

In the Applicant's submission, there is nothing within the teaching of De Moor, which suggests to the skilled person to use relatively thick (at least 0.25 microns) heater elements having a mass of 10 ng or less. There is certainly nothing in De Moor, which the skilled person would find useful in connection with Manaka's suspended heater elements. De Moor performs a series of resistivity tests on thin (65 nm or less), embedded heater elements; whereas Manaka teaches a suspended heater element. *A priori*, the skilled person would not find anything of relevance to Manaka's suspended heater elements within the teaching of De Moor.

Moreover, if the skilled person had considered combining the teachings of De Moor and Manaka, he would still not arrive at the present invention. The present invention requires a heater element having a thickness of at least 0.25 microns, whereas De Moor teaches a heater element with a maximum thickness of 65 nm. In the Applicant's submission, De Moor's thin heater elements would perform poorly as suspended heater elements due to the additional torsional stresses experienced during heating, which are not experienced in embedded heater elements.

In summary, the Applicant contests the Examiner's rejection of obviousness, because the skilled person would not be motivated to combine separate teachings from one document relating to thin, embedded heater elements and one document relating to a suspended heater element. Moreover, if he had been motivated to combine their teachings, he still would not arrive at the present invention, because De Moor fails to teach heater elements having a thickness of at least 0.25 microns.

It is respectfully submitted that all of the Examiner's objections have been successfully traversed. Accordingly, it is submitted that the application is now in condition for allowance. Reconsideration and allowance of the application is courteously solicited.

Very respectfully,

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